SWIS# 52-AA-0001

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 88-036

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF TEHAMA
AND CITY OF RED BLUFF
CLASS III LANDFILL
TEHAMA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The County of Tehama submitted a Report of Waste Discharge, dated 6 April 1987; a site evaluation report, dated 30 December 1986; a waste characterization report, dated 29 June 1987; a facility design report, dated 29 August 1985; a facility operations plan, dated 1 February 1986; a water quality monitoring plan, dated 29 August 1985; and a Solid Waste Assessment Test (SWAT) report, dated 29 June 1987.

2. The Report of Waste Discharge requests revised waste discharge requirements for reclassification of the existing II-2 disposal site to a Class III Waste Management Unit (WMU). The WMU is currently regulated by Waste Discharge Requirements Order No. 74-147, which is no longer in conformance with Title 23, California Code of Regulations (CCR), Chapter 3, Subchapter 15 (hereafter Subchapter 15).

3. The 83.63-acre disposal site, comprising Assessor Parcel Number 24-010-04, is jointly owned by the County of Tehama and the City of Red Bluff. The County of Tehama is solely responsible for operational control of the site. Waste disposal activities are currently limited to 40 acres of the site. The remaining 43 acres have been set aside for future expansion. The site is two miles northwest of Red Bluff in Section 15, T27N, R4W, MDB&M, as shown on Attachment "A" which is incorporated herein and made part of this Order. The County of Tehama and the City of Red Bluff are hereafter designated as the Discharger.

4. The Discharger proposes to continue to discharge municipal solid waste, household refuse, commercial refuse, wood waste, demolition waste, and yard trimmings to the WMU, as shown on Attachment "B" which is incorporated herein and made part of this Order. These wastes have been classified as 'nonhazardous solid waste' or 'inert waste' using the criteria set forth in Subchapter 15. The discharge rate is approximately 50 tons per day.

5. During winter operations, the facility generates a small quantity of leachate. The leachate is collected in a bermed area at the toe of the working face. At the completion of the winter period, the bermed area is

removed and the residual material and soil are returned to the top of the fill area. There is very little leachate generated at this facility during the dry season.

6. The site is approximately 475 feet elevation mean sea level (MSL) within a swell area ranging from 425 to 500 feet MSL. The total calculated volumetric capacity of the facility is 2 million cubic yards. The remaining useful life of the disposal site is 25 years, depending on site use.

7. Land within 1,000 feet of the site is open space and used for cattle and sheep grazing.

8. The site is underlain by a well-consolidated deposit, consisting of dense to very dense sandy clay and clayey gravel of the Tehama formation. Permeability values for the clay-bound soils range from 10^{-5} to 10^{-7} cm/sec, indicating relatively impermeable strata. Underlying the Tehama formation at great depth is the Chico formation which consists of marine sediment. The exact depth of the Chico formation beneath the site is unknown; however, studies indicate a maximum thickness of the Tehama formation of 2,000 feet.

9. There are no faults or folds at the site. The nearest quaternary fault is approximately 19 miles northeast of the disposal area. A geologic structure beneath the landfill manifests itself in a low-angle homoclinal dip of approximately one to three degrees to the east.

10. One upgradient and two downgradient deep monitoring wells were installed in September 1986, penetrating the upper few feet of the regional aquifer in the Tehama formation. Preliminary water level data from these wells indicate the regional ground water surface is between 322 and 345 feet elevation MSL, approximately 120 feet below the site.

11. Three suction lysimeters and five gas-monitoring holes were installed in September 1986 between a depth of 17 and 33 feet below the surface of the landfill. Lysimeters were installed in silty clay or clayey sand.

12. The beneficial uses of ground water are municipal, agricultural, and industrial supply.

13. The site receives an average of 22 inches of precipitation, with over 90 percent occurring between October and April. The average annual evaporation is approximately 70 inches. Based on these data, the annual net evaporation at the site is 48 inches.

14. The 100-year, 24-hour precipitation event for the site is 4.4 inches as calculated by design storm precipitation data provided by the California Department of Water Resources, Rainfall Depth-Duration-Frequency for California.

15. The site is not within a 100-year floodplain. Drainage structures are in place to divert stormwater runoff around the WMU.

16. Surface drainage is to an unnamed drainage tributary of Brickyard Creek, which is a tributary of the Sacramento River.

17. The beneficial uses of Brickyard Creek and the Sacramento River include municipal, industrial, and agricultural supply; recreation; esthetic enjoyment; navigation; electric power generation; and preservation and enhancement of fish, wildlife, and other aquatic resources.

18. The Discharger has provided sufficient justification to demonstrate that six feet of the natural geologic materials between the base of the WMU and ground water will prevent the impairment of beneficial uses of ground water from the discharge of 'nonhazardous solid waste' to the landfill during the operation, closure, and post-closure maintenance period.

19. The action to update waste discharge requirements for the existing WMU is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with Title 14, CCR, Section 15301.

20. The Board, on 25 July 1975, adopted a Water Quality Control Plan for the Sacramento River Basin (5A) which contains water quality objectives for all waters of the Basin. This Order implements the water quality objectives stated in that Plan. Furthermore, the Order implements the prescriptive standards and performance goals of Subchapter 15.

21. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

22. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. 74-147 be rescinded and the County of Tehama and the City of Red Bluff, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of 'hazardous waste' and 'designated waste' at this site is prohibited. For the purposes of this Order, the terms 'hazardous waste' and 'designated waste' are as defined in Subchapter 15.

2. The discharge of liquid or semi-solid waste containing less than 50 percent solids to the WMU is prohibited.

3. The discharge to the WMU of solid waste containing free liquid or moisture in excess of the waste's moisture-holding capacity is prohibited.

4. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or ground water is prohibited.

5. The discharge of waste to ponded water from any source is prohibited.

B. Discharge Specifications

1. The treatment or disposal of waste shall not cause pollution or a nuisance as defined in the California Water Code, Section 13050.

2. Waste materials shall be confined to the WMU as shown on Attachment "B".

3. Wastes shall not be discharged below 425 feet MSL.

4. The Discharger shall remove and relocate any wastes discharged at this site in violation of this Order.

5. The disposal area shall be protected from any washout, erosion of wastes or covering material, and from inundation which could occur as a result of floods with a frequency of once in 100 years.

6. Precipitation and drainage control systems shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions as described in Finding No. 14 above.

7. The exterior surface of the disposal area shall be graded to promote lateral runoff of precipitation and to prevent ponding.

8. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.

9. During the rainy season, when precipitation can be expected, a minimum one-foot-thickness of low permeability ($1x10^{-6}$ cm/s hydraulic conductivity or less) cover shall be maintained over all but the active disposal area. The active disposal area shall be confined to the smallest area practicable, based on the anticipated quantity of waste and operational procedures.

10. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes discharged at the site.

11. All containment structures, erosion and drainage control systems shall be designed and constructed under the direct supervision of a California registered civil engineer or a certified engineering geologist, and shall be certified by the individual as meeting the prescriptive standards and performance goals of Subchapter 15.

12. At closure, the WMU shall receive a final cover consisting, at a minimum, of a two-foot-thick foundation layer which may contain waste materials overlain by a one-foot-thick clay liner, and finally by a one-foot-thick vegetative soil layer or an engineered equivalent final cover approved by the Board pursuant to Subsections 2510(b) and (c) of Subchapter 15.

13. Vegetation shall be planted and maintained over the closed WMU. Vegetation shall be selected to require a minimum of irrigation and maintenance, and shall have a rooting depth not in excess of the vegetation layer thickness.

14. The closed WMU shall be graded to at least a three-percent grade and maintained to prevent ponding.

15. Areas with slopes greater than 10 percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.

16. The closure of the WMU shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.

17. The closed WMU shall be provided with at least two permanent monuments installed by a licensed land surveyor from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period.

18. Water used for site maintenance shall be limited to the minimum amount necessary for dust control.

19. The concentrations of waste constituents or indicator parameters in waters passing through points of compliance shall not exceed the "Water Quality Protection Standards" established pursuant to Monitoring and Reporting Program No. 88-036, which is attached to this Order.

C. Receiving Water Limitations (indirect discharge from drainage control and perimeter ditches)

1. The discharge shall not increase the turbidity of the receiving waters by more than 20 percent over background levels.

2. The discharge shall not cause bottom deposits in the receiving waters.

3. The discharge shall not cause esthetically undesirable discoloration of the receiving waters.

D. Provisions

1. The Discharger shall maintain a copy of this Order at the site and make it available at all times to site-operating personnel.

2. The Discharger shall notify this Board, in writing, of any proposed change in ownership or responsibility for construction or operation of the site. The Discharger shall also notify the Board of any material change or proposed change in the character, location, or volume of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, contours, or nature of the waste.

3. The Discharger shall comply with Monitoring and Reporting Program No. 88-036, which is attached to this Order (Attachment "C").

4. The Discharger shall maintain legible records of the volume and type of each waste discharged at each WMU, and the manner and location of each discharge. Such records shall be maintained at the site until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Board and of the State Water Resources Control Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Board.

5. Within three months of the adoption of these requirements, the Discharger shall submit to the Board and to the Department of Health Services for approval a report describing a periodic load-checking program to be implemented by the Discharger to ensure that 'hazardous wastes' and 'designated wastes' are not discharged to the Class III landfill unit.

6. If the Discharger or the Board finds there is a significant increase in indicator parameters or waste constituents over the water quality protection standards (established pursuant to Monitoring and Reporting Program No. 88-036) at the points of compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days. Within 90 days, the Discharger shall submit to the Board an amended Report of Waste Discharge for establishment of a verification monitoring program, per Section 2557 of Subchapter 15, which is designed to verify that water quality protection standards have been exceeded and to determine the horizontal and vertical extent of contamination.

7. If the Discharger, through a verification monitoring program, or the Board verifies that water quality protection standards have been exceeded at or beyond points of compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days. Within 180 days, the Discharger shall submit to the Board an amended Report of Waste Discharge for establishment of a corrective action program, per Section 2558 of Subchapter 15, which is designed to achieve compliance with the water quality protection standards.

8. The Discharger shall notify the Board within 24 hours of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.

9. Within 180 days of the adoption of these requirements, the Discharger shall submit to the Board for approval a closure and post-closure maintenance plan. This plan shall describe the methods and controls used to assure protection of the quality of surface and ground waters of

this area during final operation and during any proposed subsequent use of the land. This plan shall include a revenue program to provide sufficient funding for closure and post-closure maintenance. This report shall be prepared by or under the supervision of a California registered civil engineer or certified engineering geologist, updated annually, and submitted to the Board by the 15th day of January of each year. The method used to close the WMU at the site and maintain protection of the quality of surface and ground waters shall comply with waste discharge requirements established by the Board and the most current version of the closure and post-closure maintenance plan which has been approved by the Board.

10. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor ground water, leachate from the landfill units, and surface waters per Monitoring and Reporting Program No. 88-036 throughout the post-closure maintenance period.

11. The post-closure maintenance period shall continue until the Board determines that remaining wastes in the WMU will not threaten water quality.

12. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated 1 September 1985, which are hereby incorporated into this Order.

13. The owner of the waste disposal site shall have the continuing responsibility to assure protection of usable waters from discharged wastes, gases, and leachate generated by the discharged wastes during the active life, closure, and post-closure maintenance period of the WMU and during subsequent use of the property for other purposes.

14. The Discharger, to enable operating and inspection personnel to identify elevation 425 MSL, shall establish and maintain a sufficient number of clearly visible bench marks.

15. In the event of any change in ownership of this disposal site, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.

16. The Discharger shall comply with all applicable provisions of Subchapter 15 that are not specifically referred to in this Order.

17. The Board will review this Order periodically and may revise requirements when necessary.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 26 February 1988.

William H Crooks

WILLIAM H. CROOKS, Executive Officer

GDD:gln 1/11/88

Attachments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 88-036
FOR
COUNTY OF TEHAMA
AND CITY OF RED BLUFF
CLASS III LANDFILL
TEHAMA COUNTY

NONHAZARDOUS SOLID WASTE MONITORING

The Discharger shall monitor all wastes discharged to the Class III landfill on a monthly basis and report to the Board as follows:

Parameter	Report in Units of	Sampling Frequency
Type and quantity of material discharged	Cubic Yards	Monthly
Minimum elevation of discharge	Feet (MSL)	Quarterly
Capacity of landfill unit remaining	Percent	Yearly

LEACHATE MONITORING

The landfill shall be inspected daily for leachate generation. Upon detection of leachate, the Discharger shall immediately sample and continue to sample the leachate at the following frequencies thereafter. Leachate samples shall be analyzed for the following parameters:

Parameter	Report in Units of	Sampling Frequency
Flow Rate	gallons/day	Monthly
Chemical Oxygen Demand	mg/l	Monthly
Specific Conductance	umhos/cm	Monthly
pH	pH Units	Monthly
Total Dissolved Solids	mg/l	Quarterly
Chlorides	mg/l	Quarterly
Sulfates	mg/l	Quarterly
Dissolved Iron[1]	mg/l	Quarterly
Total Kjeldahl Nitrogen	mg/l	Quarterly
Sulfides (including H_2S)	presence or absence	Quarterly

[1]Inductively Coupled Argon Plasma Atomic Emission Spectroscopy (ICAP) may be used for analysis of these parameters.

LEACHATE MONITORING (Continued)

Volatile Organics[2]	ug/l	Semiannually[3]
Aluminum[1]	mg/l	Semiannually[3]
Antimony[1]	mg/l	Semiannually[3]
Arsenic	mg/l	Semiannually[3]
Cadmium[1]	mg/l	Semiannually[3]
Total Chromium (III+VI)[1]	mg/l	Semiannually[3]
Chromium (VI)	mg/l	Semiannually[3]
Copper[1]	mg/l	Semiannually[3]
Lead[1]	mg/l	Semiannually[3]
Manganese[1]	mg/l	Semiannually[3]
Mercury	mg/l	Semiannually[3]
Nickel[1]	mg/l	Semiannually[3]
Selenium	mg/l	Semiannually[3]
Silver[1]	mg/l	Semiannually[3]
Thallium[1]	mg/l	Semiannually[3]
Zinc[1]	mg/l	Semiannually[3]

[1]Inductively Coupled Argon Plasma Atomic Emission Spectroscopy (ICAP) may be used for analysis of these parameters.

[2]EPA Methods 601 and 602, or EPA Method 624 shall be used. All peaks shall be reported.

[3]In February and August, if liquid is present. If liquid is not present in August, at the first detection of liquid thereafter.

SURFACE WATER MONITORING

Surface water flows from on and around the landfill shall be sampled at the point(s) where they leave the facility boundary, immediately after the first storm of the rainy season which produces significant flow, and weekly thereafter during significant (one inch or greater in 24 hours) storm events.

Parameter	Report in Units of
pH	pH Units
Specific Conductance	umhos/cm
Turbidity	NTU

GROUND WATER MONITORING

A detection monitoring program to determine both background and downgradient concentrations of indicator parameters and waste constituents shall be implemented for monitoring wells designated OB-1, OB-2, and OB-3 as shown on Attachment "B". The following chemical constituents will be used as indicator parameters and will be measured when sampling ground water:

Parameter	Report in Units of	Sampling Frequency
Ground Water Elevation	Feet and Tenths	Quarterly
pH	pH Units	Quarterly
Specific Conductance	umhos/cm	Quarterly
Total Dissolved Solids	mg/l	Quarterly
Chloride	mg/l	Quarterly
Nitrate	mg/l	Quarterly
Dissolved Iron	mg/l	Quarterly
COD	mg/l	Quarterly
Tannins and Lignins	mg/l	Quarterly
Volatile Organics[1]	mg/l or ug/l	Semiannually
Metals[1]	mg/l or ug/l	Semiannually

[1]Volatile organics and metals as specified for leachate monitoring shall be sampled.

Quarterly samples from the first year of sampling (two years for metals) from the background monitoring well OB-1 shall be used by the Board to develop water quality protection standards for ground water at the site. Each time OB-1 is sampled, a minimum of four discrete samples shall be taken for analysis of each parameter to determine background water quality. If subsequent sampling of background monitoring wells indicates significant water quality changes due to either seasonal fluctuations or reasons unrelated to waste management activities at the site, the Discharger may request modification of these water quality protection standards.

VADOSE ZONE MONITORING

A detection monitoring program to detect both background and downgradient concentrations of indicator parameters and waste constituents shall be implemented for suction lysimeters L-1, L-2, and L-3 as shown on Attachment "B". The following chemical constituents will be used as indicator parameters and will be measured when sampling the vadose zone:

Parameter	Report in Units of	Sampling Frequency
Ground Water Elevation	Feet and Tenths	Quarterly
pH	pH Units	Quarterly
Specific Conductance	umhos/cm	Quarterly
Total Dissolved Solids	mg/l	Quarterly
Chloride	mg/l	Quarterly
Nitrate	mg/l	Quarterly
Dissolved Iron	mg/l	Quarterly
COD	mg/l	Quarterly
Tannins and Lignins	mg/l	Quarterly
Volatile Organics[1]	mg/l or ug/l	Semiannually[2]
Metals[1]	mg/l or ug/l	Semiannually[2]

[1]Volatile organics and metals as specified for leachate monitoring shall be sampled.

[2]In February and August.

Quarterly samples from the first year of sampling (two years for metals) from the background suction lysimeter L-1 shall be used by the Board to develop water quality protection standards for soil-pore liquid at the site. Each time L-1 is sampled, a minimum of four discrete samples shall be taken for analysis of each parameter to determine background soil-pore liquid quality. If subsequent sampling of background suction lysimeters indicates significant water quality changes due to either seasonal fluctuations or reasons unrelated to waste management activities at the site, the Discharger may request modification of these water quality protection standards.

REPORTING

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements.

Monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, he shall include the results of such monitoring in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.

William H. Crooks

WILLIAM H. CROOKS, Executive Officer

26 February 1988
(Date)

GDD:gln 1/11/88

INFORMATION SHEET

COUNTY OF TEHAMA
AND CITY OF RED BLUFF
CLASS III LANDFILL
TEHAMA COUNTY

Tehama County and the City of Red Bluff own and operate a landfill two miles northwest of the City of Red Bluff in Tehama County, Section 15, T27N, R4W, MDB&M. The disposal site was opened in 1964 as an open burn dump. In 1974 the site was converted to a sanitary landfill, and in 1978 the State Solid Waste Management Board classified the site as a Class II-2 disposal site suitable to receive Group 2 and Group 3 wastes. Waste discharge requirements, adopted on 25 January 1974, are neither adequate nor consistent with plans and policies of the Board, and do not meet the prescriptive standards and performance goals of Subchapter 15.

The Discharger has requested waste discharge requirements for reclassification of the site as a Class III landfill. The Discharger proposes to operate the site as a Class III landfill, accepting only nonhazardous solid waste or inert waste generated within the County. The nonhazardous solid waste will consist of commercial refuse, household refuse, municipal solid waste, wood waste, demolition waste, and yard trimmings. The discharge rate of refuse is approximately 50 tons per day. The remaining calculated useful life of the site is 25 years.

To date, there has not been significant leachate generated at the site. During winter operations, the facility generates a small quantity of leachate which is collected in a bermed area at the toe of the working face. At the completion of the wet season, the bermed area is removed and the residual material and soil are returned to the top of the fill area. There is little to no leachate generated during the summertime.

The site is in a swell within gently rolling hills, with a top elevation of 500 feet MSL and a bottom of 425 feet MSL. The requirements prohibit the placement of waste below 425 feet MSL. Soils beneath the site consist of well-consolidated deposits of dense to very dense sandy clay and clayey gravel of the Tehama formation. Permeability values for the clay-bound soils range from 10^{-5} to 10^{-7} cm/sec, indicating relatively impermeable strata. Data from ground water monitoring wells installed in September 1986 indicate ground water surface is between 322 and 345 feet elevation MSL, approximately 120 feet below the site. The general direction of ground water movement is toward the east-southeast.

Three (3) suction lysimeters and five (5) gas monitoring holes were installed in September 1986 between a depth of 17 and 33 feet below the surface of the landfill. The SWAT report indicates there is no off-site migration of hazardous or other wastes.

Rainfall at the site averages 22 inches per year, while the average annual evaporation exceeds 70 inches.

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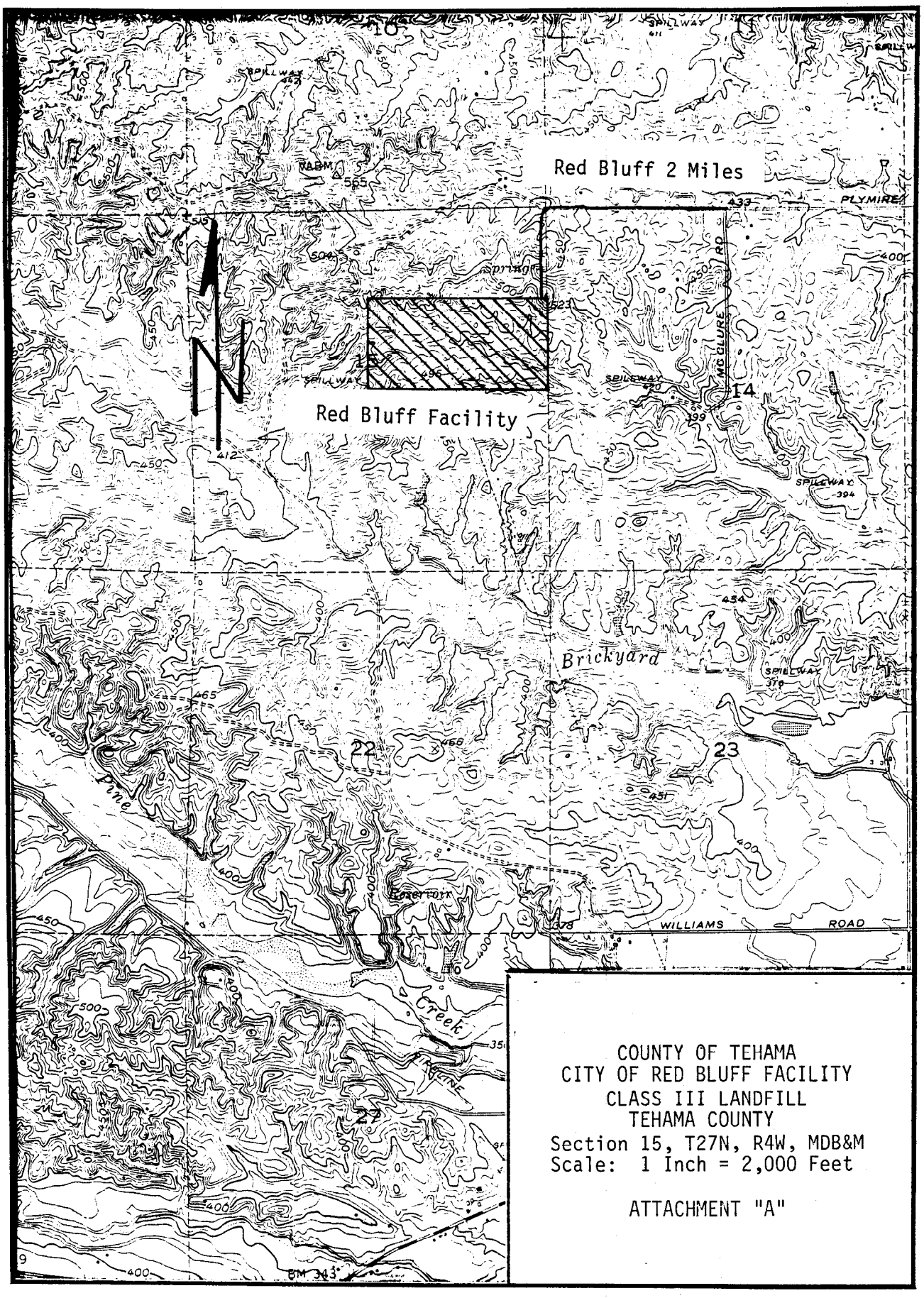
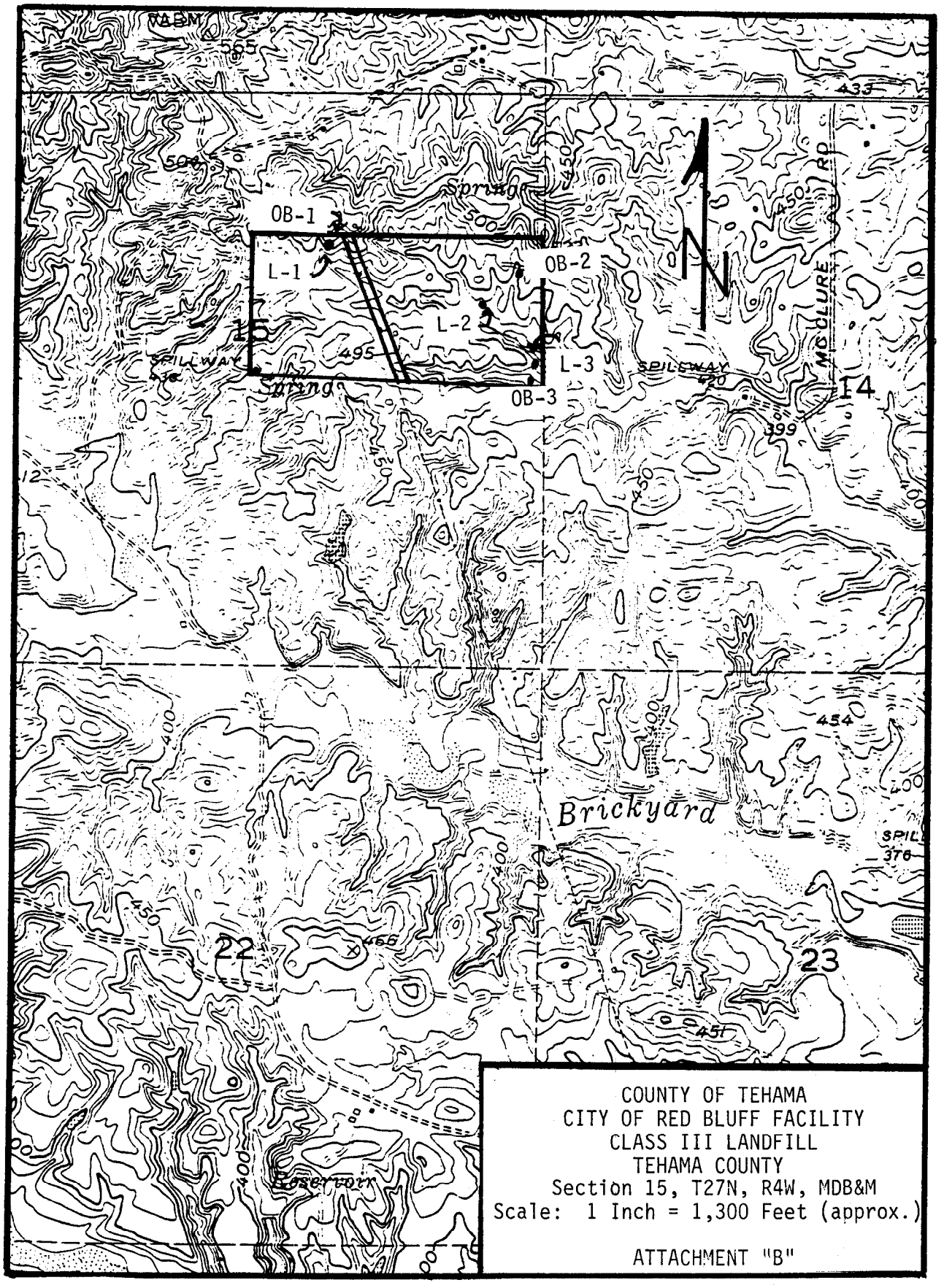


COUNTY OF TEHAMA
CITY OF RED BLUFF FACILITY
CLASS III LANDFILL
TEHAMA COUNTY
Section 15, T27N, R4W, MDB&M
Scale: 1 Inch = 2,000 Feet

ATTACHMENT "A"



COUNTY OF TEHAMA
CITY OF RED BLUFF FACILITY
CLASS III LANDFILL
TEHAMA COUNTY
Section 15, T27N, R4W, MDB&M
Scale: 1 Inch = 1,300 Feet (approx.)

ATTACHMENT "B"